District I

1625 N. French Dr., Hobbs, NM 88240

District II

811 S. First St., Artesia, NM 88210

District III

1000 Rio Brazos Road, Aztec, NM 87410

District IV

### State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised April 3, 2017

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

1220 S. St. Flan	CIS DI., Santa	1 Fe, INIVI 67303	,	Sa	anta F	e, NM 875	505					
			Rele	ease Notific	catio	n and Co	orrective A	ction				
						OPERA'	ГOR		Initia	al Report	⊠ Fi	inal Repor
Name of Co	ompany Hi	lcorp Energy	V			Contact Cla				1		1
Address 382			/				No. 505-564-073	33				
Facility Nar						Facility Typ						
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Surface Ow	ner BLM			Mineral	Jwner I	BLM (NM-0	110063		APINO	0.30-045-075	14	
						N OF RE						
Unit Letter D	Section 17	Township 28N	Range 11W	Feet from the 990	North North	/South Line	Feet from the 990	East/W West	est Line	County San Juan		
			Latitude	36.6667213	Lo	ongitude10	08.0327835	NAD	083			
				NAT	TURE	OF REL						
Type of Rele							Release Unknow			Recovered nor		
Source of Re	lease Unkn	own				Date and I Unknown	Hour of Occurrence			Hour of Disco 5, 2017 3:00 p		
Was Immedi	ate Notice (					If YES, To	Whom?		rugust 1.	5, 2017 5.00 p	7.111.	
		$\boxtimes$	Yes	No Not R	equired	NMOCD (	V Fields) and BL	M (W Th	nomas)			
By Whom? (							Hour August 16, 2			0 respectively	Į.	
Was a Water	course Read		Yes 🗵	No		If YES, Vo	olume Impacting t	the Water	course.			
If a Watercon	urse was Im	pacted, Descr	ibe Fully.	k								
							***	of the professional section in	NMOCO			
Describe Cau	use of Probl	em and Reme	dial Action	n Taken.*					nmu c u			
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regulations a public health should their or or the enviro	Il operators or the environment operations homent. In a	are required to ronment. The lave failed to a	o report and acceptant adequately OCD accept	nd/or file certain reports of a C-141 reports investigate and r	release rort by the remediate	notifications a le NMOCD m le contaminati	knowledge and und perform correct parked as "Final R fon that pose a three the operator of	etive action eport" do eat to gro	ons for releases not released water	eases which mieve the opera r, surface water	nay enda ator of lia er, huma	nger ability n health
Signature:	Clara	Cords					OIL CON	SERVA	ATION	DIVISIO	*	
Printed Name	e: Clara Car	rdoza				Approved by	Environmental S	pecialist:	Can	2/1	~	
Title: Enviro	nmental Spo	ecialist				Approval Da	te: 6/12/14	E	xpiration	Date:		

\* Attach Additional Sheets If Necessary

Phone: 505/564/0733

Date: 06/05/2018

E-mail Address: ccardoza@hilcorp.com

#NCS1723538706

Conditions of Approval:

(48)

Attached

# ATTACHMENT A

# ATTACHMENT B



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

April 17, 2018

Heather Woods Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401 TEL: (505) 325-1055

FAX

RE: Lucerne A #1 OrderNo.: 1804551

#### Dear Heather Woods:

Hall Environmental Analysis Laboratory received 17 sample(s) on 4/11/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the OC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC Client Sample ID: Conf-1

**Project:** Lucerne A #1 Collection Date: 4/10/2018 10:15:00 AM 1804551-001 Matrix: SOIL Received Date: 4/11/2018 7:50:00 AM Lab ID:

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	;			Analyst	TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	4/13/2018 2:04:40 PM	37570
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	4/13/2018 2:04:40 PM	37570
Surr: DNOP	78.2	70-130	%Rec	1	4/13/2018 2:04:40 PM	37570
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/12/2018 11:32:16 PM	37551
Surr: BFB	106	15-316	%Rec	1	4/12/2018 11:32:16 PM	37551
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.025	mg/Kg	1	4/12/2018 11:32:16 PM	37551
Toluene	ND	0.050	mg/Kg	1	4/12/2018 11:32:16 PM	37551
Ethylbenzene	ND	0.050	mg/Kg	1	4/12/2018 11:32:16 PM	37551
Xylenes, Total	ND	0.10	mg/Kg	1	4/12/2018 11:32:16 PM	37551
Surr: 4-Bromofluorobenzene	90.7	80-120	%Rec	1	4/12/2018 11:32:16 PM	37551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded H
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 1 of 23 J
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-2

Project: Lucerne A #1

Collection Date: 4/10/2018 10:20:00 AM

Lab ID: 1804551-002

Matrix: SOIL Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analys	: TOM
Diesel Range Organics (DRO)	130	9.2	mg/Kg	1	4/13/2018 3:17:39 PM	37570
Motor Oil Range Organics (MRO)	95	46	mg/Kg	1	4/13/2018 3:17:39 PM	37570
Surr: DNOP	83.3	70-130	%Rec	1	4/13/2018 3:17:39 PM	37570
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/13/2018 1:05:21 AM	37551
Surr: BFB	94.3	15-316	%Rec	1	4/13/2018 1:05:21 AM	37551
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.024	mg/Kg	1	4/13/2018 1:05:21 AM	37551
Toluene	ND	0.048	mg/Kg	1	4/13/2018 1:05:21 AM	37551
Ethylbenzene	ND	0.048	mg/Kg	1	4/13/2018 1:05:21 AM	37551
Xylenes, Total	ND	0.097	mg/Kg	1	4/13/2018 1:05:21 AM	37551
Surr: 4-Bromofluorobenzene	87.3	80-120	%Rec	1	4/13/2018 1:05:21 AM	37551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC Lucerne A #1

1804551-003 Lab ID:

Project:

Client Sample ID: Conf-3

Collection Date: 4/10/2018 10:25:00 AM

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	i			Analyst	: TOM
Diesel Range Organics (DRO)	94	9.9	mg/Kg	1	4/13/2018 3:42:04 PM	37570
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	4/13/2018 3:42:04 PM	37570
Surr: DNOP	84.6	70-130	%Rec	1	4/13/2018 3:42:04 PM	37570
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/13/2018 1:28:41 AM	37551
Surr: BFB	96.1	15-316	%Rec	1	4/13/2018 1:28:41 AM	37551
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	4/13/2018 1:28:41 AM	37551
Toluene	ND	0.050	mg/Kg	1	4/13/2018 1:28:41 AM	37551
Ethylbenzene	ND	0.050	mg/Kg	1	4/13/2018 1:28:41 AM	37551
Xylenes, Total	ND	0.10	mg/Kg	1	4/13/2018 1:28:41 AM	37551
Surr: 4-Bromofluorobenzene	87.7	80-120	%Rec	1	4/13/2018 1:28:41 AM	37551

Matrix: SOIL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 3 of 23 J
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-4

**Project:** Lucerne A #1

**Collection Date:** 4/10/2018 10:30:00 AM

**Lab ID:** 1804551-004

Matrix: SOIL

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	110	9.5	mg/Kg	1	4/13/2018 4:06:25 PM	37570
Motor Oil Range Organics (MRO)	49	47	mg/Kg	1	4/13/2018 4:06:25 PM	37570
Surr: DNOP	84.0	70-130	%Rec	1	4/13/2018 4:06:25 PM	37570
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/13/2018 1:52:00 AM	37551
Surr: BFB	97.9	15-316	%Rec	1	4/13/2018 1:52:00 AM	37551
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	4/13/2018 1:52:00 AM	37551
Toluene	ND	0.048	mg/Kg	1	4/13/2018 1:52:00 AM	37551
Ethylbenzene	ND	0.048	mg/Kg	1	4/13/2018 1:52:00 AM	37551
Xylenes, Total	ND	0.096	mg/Kg	1	4/13/2018 1:52:00 AM	37551
Surr: 4-Bromofluorobenzene	87.4	80-120	%Rec	1	4/13/2018 1:52:00 AM	37551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 4 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-5

Project: Lucerne A #1

Collection Date: 4/10/2018 10:35:00 AM

Lab ID: 1804551-005

Matrix: SOIL

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	5			Analyst	: TOM
Diesel Range Organics (DRO)	280	9.1	mg/Kg	1	4/13/2018 4:30:54 PM	37570
Motor Oil Range Organics (MRO)	110	46	mg/Kg	1	4/13/2018 4:30:54 PM	37570
Surr: DNOP	93.2	70-130	%Rec	1	4/13/2018 4:30:54 PM	37570
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/13/2018 2:15:10 AM	37551
Surr: BFB	111	15-316	%Rec	1	4/13/2018 2:15:10 AM	37551
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	4/13/2018 2:15:10 AM	37551
Toluene	ND	0.049	mg/Kg	1	4/13/2018 2:15:10 AM	37551
Ethylbenzene	ND	0.049	mg/Kg	1	4/13/2018 2:15:10 AM	37551
Xylenes, Total	ND	0.099	mg/Kg	1	4/13/2018 2:15:10 AM	37551
Surr: 4-Bromofluorobenzene	92.5	80-120	%Rec	1	4/13/2018 2:15:10 AM	37551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 5 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: Conf-6

Project: Lucerne A #1

Collection Date: 4/10/2018 10:39:00 AM

Lab ID: 1804551-006

Matrix: SOIL

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	15	9.3	mg/Kg	1	4/13/2018 4:55:13 PM	37570
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	4/13/2018 4:55:13 PM	37570
Surr: DNOP	83.9	70-130	%Rec	1	4/13/2018 4:55:13 PM	37570
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/13/2018 2:38:25 AM	37551
Surr: BFB	92.8	15-316	%Rec	1	4/13/2018 2:38:25 AM	37551
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	4/13/2018 2:38:25 AM	37551
Toluene	ND	0.048	mg/Kg	1	4/13/2018 2:38:25 AM	37551
Ethylbenzene	ND	0.048	mg/Kg	1	4/13/2018 2:38:25 AM	37551
Xylenes, Total	ND	0.097	mg/Kg	1	4/13/2018 2:38:25 AM	37551
Surr: 4-Bromofluorobenzene	88.4	80-120	%Rec	1	4/13/2018 2:38:25 AM	37551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 6 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-7

Project: Lucerne A #1

.

Collection Date: 4/10/2018 10:45:00 AM

**Lab ID:** 1804551-007

Matrix: SOIL

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	22	9.4	mg/Kg	1	4/13/2018 5:19:35 PM	37570
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	4/13/2018 5:19:35 PM	37570
Surr: DNOP	82.6	70-130	%Rec	1	4/13/2018 5:19:35 PM	37570
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/13/2018 3:01:49 AM	37551
Surr: BFB	94.6	15-316	%Rec	1	4/13/2018 3:01:49 AM	37551
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.024	mg/Kg	1	4/13/2018 3:01:49 AM	37551
Toluene	ND	0.049	mg/Kg	1	4/13/2018 3:01:49 AM	37551
Ethylbenzene	ND	0.049	mg/Kg	1	4/13/2018 3:01:49 AM	37551
Xylenes, Total	ND	0.097	mg/Kg	1	4/13/2018 3:01:49 AM	37551
Surr: 4-Bromofluorobenzene	87.0	80-120	%Rec	1	4/13/2018 3:01:49 AM	37551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 7 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

#### Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Lucerne A #1

Lab ID: 1804551-008

Project:

Client Sample ID: Conf-8

Collection Date: 4/10/2018 10:50:00 AM

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3			Analyst	: ТОМ
Diesel Range Organics (DRO)	390	10	mg/Kg	1	4/13/2018 5:43:54 PM	37570
Motor Oil Range Organics (MRO)	250	50	mg/Kg	1	4/13/2018 5:43:54 PM	37570
Surr: DNOP	90.4	70-130	%Rec	1	4/13/2018 5:43:54 PM	37570
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/13/2018 3:25:13 AM	37551
Surr: BFB	96.1	15-316	%Rec	1	4/13/2018 3:25:13 AM	37551
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	4/13/2018 3:25:13 AM	37551
Toluene	ND	0.048	mg/Kg	1	4/13/2018 3:25:13 AM	37551
Ethylbenzene	ND	0.048	mg/Kg	1	4/13/2018 3:25:13 AM	37551
Xylenes, Total	ND	0.095	mg/Kg	1	4/13/2018 3:25:13 AM	37551
Surr: 4-Bromofluorobenzene	90.8	80-120	%Rec	1	4/13/2018 3:25:13 AM	37551

Matrix: SOIL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 8 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# Analytical Report Lab Order 1804551

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 4/17/2018

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-9

Project: Lucerne A #1

Collection Date: 4/10/2018 10:55:00 AM

**Lab ID:** 1804551-009

Matrix: SOIL

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	4/13/2018 6:08:22 PM	37570
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	4/13/2018 6:08:22 PM	37570
Surr: DNOP	82.5	70-130	%Rec	1	4/13/2018 6:08:22 PM	37570
EPA METHOD 8015D: GASOLINE RANG	SE .				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/13/2018 3:48:26 AM	37551
Surr: BFB	98.7	15-316	%Rec	1	4/13/2018 3:48:26 AM	37551
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	4/13/2018 3:48:26 AM	37551
Toluene	ND	0.050	mg/Kg	1	4/13/2018 3:48:26 AM	37551
Ethylbenzene	ND	0.050	mg/Kg	1	4/13/2018 3:48:26 AM	37551
Xylenes, Total	ND	0.10	mg/Kg	1	4/13/2018 3:48:26 AM	37551
Surr: 4-Bromofluorobenzene	91.0	80-120	%Rec	1	4/13/2018 3:48:26 AM	37551

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 9 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1804551

Date Reported: 4/17/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-10

**Project:** Lucerne A #1

Collection Date: 4/10/2018 11:02:00 AM

**Lab ID:** 1804551-010

Matrix: SOIL

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS	5			Analyst	TOM
Diesel Range Organics (DRO)	40	9.2	mg/Kg	1	4/13/2018 6:32:37 PM	37570
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	4/13/2018 6:32:37 PM	37570
Surr: DNOP	93.7	70-130	%Rec	1	4/13/2018 6:32:37 PM	37570
EPA METHOD 8015D: GASOLINE RAM	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	4/13/2018 4:11:53 AM	37562
Surr: BFB	95.3	15-316	%Rec	1	4/13/2018 4:11:53 AM	37562
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	4/13/2018 4:11:53 AM	37562
Toluene	ND	0.046	mg/Kg	1	4/13/2018 4:11:53 AM	37562
Ethylbenzene	ND	0.046	mg/Kg	1	4/13/2018 4:11:53 AM	37562
Xylenes, Total	ND	0.092	mg/Kg	1	4/13/2018 4:11:53 AM	37562
Surr: 4-Bromofluorobenzene	90.5	80-120	%Rec	1	4/13/2018 4:11:53 AM	37562

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 10 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Project: Lucerne A #1

Lab ID: 1804551-011

Client Sample ID: Conf-11

Collection Date: 4/10/2018 11:05:00 AM

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS	3			Analys	t: TOM
Diesel Range Organics (DRO)	32	9.2	mg/Kg	1	4/13/2018 6:57:01 PM	37570
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	4/13/2018 6:57:01 PM	37570
Surr: DNOP	80.8	70-130	%Rec	1	4/13/2018 6:57:01 PM	37570
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/13/2018 4:35:10 AM	37562
Surr: BFB	90.0	15-316	%Rec	1	4/13/2018 4:35:10 AM	37562
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	4/13/2018 4:35:10 AM	37562
Toluene	ND	0.048	mg/Kg	1	4/13/2018 4:35:10 AM	37562
Ethylbenzene	ND	0.048	mg/Kg	1	4/13/2018 4:35:10 AM	37562
Xylenes, Total	ND	0.095	mg/Kg	1	4/13/2018 4:35:10 AM	37562
Surr: 4-Bromofluorobenzene	87.1	80-120	%Rec	1	4/13/2018 4:35:10 AM	37562

Matrix: SOIL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 11 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# Analytical Report Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: Conf-12

**Project:** Lucerne A #1

**CLIENT:** Rule Engineering LLC

Collection Date: 4/10/2018 11:10:00 AM

**Lab ID:** 1804551-012

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	110	9.2	mg/Kg	1	4/13/2018 7:21:11 PM	37570
Motor Oil Range Organics (MRO)	92	46	mg/Kg	1	4/13/2018 7:21:11 PM	37570
Surr: DNOP	88.7	70-130	%Rec	1	4/13/2018 7:21:11 PM	37570
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	4/13/2018 12:13:32 PM	37562
Surr: BFB	98.6	15-316	%Rec	1	4/13/2018 12:13:32 PM	37562
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	4/13/2018 12:13:32 PM	37562
Toluene	ND	0.047	mg/Kg	1	4/13/2018 12:13:32 PM	37562
Ethylbenzene	ND	0.047	mg/Kg	1	4/13/2018 12:13:32 PM	37562
Xylenes, Total	ND	0.094	mg/Kg	1	4/13/2018 12:13:32 PM	37562
Surr: 4-Bromofluorobenzene	92.8	80-120	%Rec	1	4/13/2018 12:13:32 PM	37562

Matrix: SOIL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 12 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-13

**Project:** Lucerne A #1 Collection Date: 4/10/2018 11:11:00 AM

Lab ID: 1804551-013

Matrix: SOIL

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	8			Analyst	: TOM
Diesel Range Organics (DRO)	50	9.4	mg/Kg	1	4/13/2018 7:45:28 PM	37570
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	4/13/2018 7:45:28 PM	37570
Surr: DNOP	82.7	70-130	%Rec	1	4/13/2018 7:45:28 PM	37570
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/13/2018 12:36:59 PM	37562
Surr: BFB	97.9	15-316	%Rec	1	4/13/2018 12:36:59 PM	37562
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	4/13/2018 12:36:59 PM	37562
Toluene	ND	0.048	mg/Kg	1	4/13/2018 12:36:59 PM	37562
Ethylbenzene	ND	0.048	mg/Kg	1	4/13/2018 12:36:59 PM	37562
Xylenes, Total	ND	0.096	mg/Kg	1	4/13/2018 12:36:59 PM	37562
Surr: 4-Bromofluorobenzene	90.6	80-120	%Rec	1	4/13/2018 12:36:59 PM	37562

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits Page 13 of 23 J
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

#### Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-14

**Project:** Lucerne A #1

**Collection Date:** 4/10/2018 11:20:00 AM

**Lab ID:** 1804551-014

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst	:: TOM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	4/13/2018 8:09:38 PM	37570
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	4/13/2018 8:09:38 PM	37570
Surr: DNOP	87.2	70-130	%Rec	1	4/13/2018 8:09:38 PM	37570
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/13/2018 1:00:25 PM	37562
Surr: BFB	100	15-316	%Rec	1	4/13/2018 1:00:25 PM	37562
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	4/13/2018 1:00:25 PM	37562
Toluene	ND	0.048	mg/Kg	1	4/13/2018 1:00:25 PM	37562
Ethylbenzene	ND	0.048	mg/Kg	1	4/13/2018 1:00:25 PM	37562
Xylenes, Total	ND	0.096	mg/Kg	1	4/13/2018 1:00:25 PM	37562
Surr: 4-Bromofluorobenzene	91.9	80-120	%Rec	1	4/13/2018 1:00:25 PM	37562

Matrix: SOIL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 14 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

#### Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-15

**Project:** Lucerne A #1

**Collection Date:** 4/10/2018 5:22:00 PM

**Lab ID:** 1804551-017

Matrix: SOIL

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	4/13/2018 9:22:10 PM	37570
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	4/13/2018 9:22:10 PM	37570
Surr: DNOP	87.5	70-130	%Rec	1	4/13/2018 9:22:10 PM	37570
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/13/2018 2:10:38 PM	37580
Surr: BFB	96.7	15-316	%Rec	1	4/13/2018 2:10:38 PM	37580
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	4/13/2018 2:10:38 PM	37580
Toluene	ND	0.049	mg/Kg	1	4/13/2018 2:10:38 PM	37580
Ethylbenzene	ND	0.049	mg/Kg	1	4/13/2018 2:10:38 PM	37580
Xylenes, Total	ND	0.099	mg/Kg	1	4/13/2018 2:10:38 PM	37580
Surr: 4-Bromofluorobenzene	87.9	80-120	%Rec	1	4/13/2018 2:10:38 PM	37580

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 17 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

#### Lab Order 1804551

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 4/17/2018

CLIENT: Rule Engineering LLC Client Sample ID: Conf-16

 Project:
 Lucerne A #1
 Collection Date: 4/10/2018 11:10:00 AM

 Lab ID:
 1804551-015
 Matrix: SOIL
 Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	46	9.3	mg/Kg	1	4/13/2018 8:33:48 PM	37570
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	4/13/2018 8:33:48 PM	37570
Surr: DNOP	84.3	70-130	%Rec	1	4/13/2018 8:33:48 PM	37570
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/13/2018 1:23:37 PM	37562
Surr: BFB	108	15-316	%Rec	1	4/13/2018 1:23:37 PM	37562
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	4/13/2018 1:23:37 PM	37562
Toluene	ND	0.050	mg/Kg	1	4/13/2018 1:23:37 PM	37562
Ethylbenzene	ND	0.050	mg/Kg	1	4/13/2018 1:23:37 PM	37562
Xylenes, Total	ND	0.099	mg/Kg	1	4/13/2018 1:23:37 PM	37562
Surr: 4-Bromofluorobenzene	94.5	80-120	%Rec	1	4/13/2018 1:23:37 PM	37562

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 15 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

#### Lab Order 1804551

Date Reported: 4/17/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: Conf-17

Project: Lucerne A #1

Collection Date: 4/10/2018 11:17:00 AM

**Lab ID:** 1804551-016

Matrix: SOIL

Received Date: 4/11/2018 7:50:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	4/13/2018 8:57:58 PM	37570
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	4/13/2018 8:57:58 PM	37570
Surr: DNOP	84.7	70-130	%Rec	1	4/13/2018 8:57:58 PM	37570
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/13/2018 1:47:00 PM	37562
Surr: BFB	99.1	15-316	%Rec	1	4/13/2018 1:47:00 PM	37562
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.024	mg/Kg	1	4/13/2018 1:47:00 PM	37562
Toluene	ND	0.048	mg/Kg	1	4/13/2018 1:47:00 PM	37562
Ethylbenzene	ND	0.048	mg/Kg	1	4/13/2018 1:47:00 PM	37562
Xylenes, Total	ND	0.096	mg/Kg	1	4/13/2018 1:47:00 PM	37562
Surr: 4-Bromofluorobenzene	91.7	80-120	%Rec	1	4/13/2018 1:47:00 PM	37562

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 16 of 23
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

WO#: 180

1804551 17-Apr-18

Client:

Rule Engineering LLC

Project:

Lucerne A #1

roject.	Lucerne A #1									
Sample ID LCS-37	7570 Sai	mpType: L0	cs	Tes	tCode: E	PA Method	8015M/D: Di	esel Range	e Organics	
Client ID: LCSS	В	atch ID: 37	7570	F	RunNo: 5	0538				
Prep Date: 4/12/2	2018 Analys	is Date: 4	/13/2018	\$	SeqNo: 1	639334	Units: mg/k	(g		
Analyte	Resu	lt PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (	DRO) 4	6 10	50.00	0	91.4	70	130			
Surr: DNOP	3.	6	5.000		71.1	70	130			
Sample ID MB-37	570 Sa	mpType: M	BLK	Tes	tCode: E	PA Method	8015M/D: Di	esel Range	e Organics	
Client ID: PBS	В	atch ID: 37	7570	F	RunNo: 5	0538				
Prep Date: 4/12/2	2018 Analys	is Date: 4	/13/2018	5	SeqNo: 1	639335	Units: mg/k	ζg		
Analyte	Resu	lt PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (	DRO) N	) 10								
Motor Oil Range Organic	cs (MRO) N	50								
Surr: DNOP	8.	1	10.00		80.9	70	130			
Sample ID 180455	<b>1-001AMS</b> Sar	mpType: M	S	Tes	tCode: E	PA Method	8015M/D: Di	esel Range	e Organics	
Client ID: Conf-1	В	atch ID: 37	7570	F	RunNo: 5	0538				
Prep Date: 4/12/2	2018 Analys	is Date: 4	/13/2018	5	SeqNo: 1	639675	Units: mg/k	(g		
Analyte	Resu	lt PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (	DRO) 4	8 10	49.95	0	95.8	55.8	125			
Surr: DNOP	4.	0	4.995		79.3	70	130			
Sample ID 180455	51-001AMSD Sai	трТуре: М	SD	Tes	tCode: E	PA Method	8015M/D: Di	esel Range	e Organics	
Client ID: Conf-1	В	atch ID: 37	7570	F	RunNo: 5	0538				
Prep Date: 4/12/2	2018 Analys	is Date: 4	/13/2018	5	SeqNo: 1	639676	Units: mg/k	<b>(</b> g		
Analyte	Resu	lt PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics	,			0	94.7	55.8	125	4.65	20	
Surr: DNOP	3.	8	4.826		78.6	70	130	0	0	

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits

Page 18 of 23

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Client:

## Hall Environmental Analysis Laboratory, Inc.

Rule Engineering LLC

WO#: 1804551

17-Apr-18

	rne A #1					
Sample ID MB-37562	SampType: <b>MBLK</b>	TostCodo: EDA	Method 8015D:	Gasolino Ban		
				Sasonne Rang	ge	
Client ID: PBS	Batch ID: 37562	RunNo: 505				
Prep Date: 4/11/2018	Analysis Date: 4/12/2018	SeqNo: 163	8726 Units:	mg/Kg		
Analyte		SPK Ref Val %REC I	_owLimit HighLi	mit %RPD	RPDLimit	Qual
Gasoline Range Organics (GRO Surr: BFB	) ND 5.0 950 1000	95.1	15 3	16		
Sample ID LCS-37562	SampType: LCS	TestCode: EPA	Method 8015D:	Gasoline Ran	ge	
Client ID: LCSS	Batch ID: 37562	RunNo: 505	808			
Prep Date: 4/11/2018	Analysis Date: 4/12/2018	SeqNo: 163	8727 Units:	mg/Kg		
Analyte	Result PQL SPK value	SPK Ref Val %REC I	_owLimit HighLi	mit %RPD	RPDLimit	Qual
Gasoline Range Organics (GRO	) 29 5.0 25.00	0 115	75.9	31		
Surr: BFB	1100 1000	111	15 3	16		
Sample ID 1804551-011	AMS SampType: MS	TestCode: EPA	Method 8015D:	Gasoline Rang	ge	
Client ID: Conf-11	Batch ID: 37562	RunNo: 505	08			
Prep Date: 4/11/2018	Analysis Date: 4/12/2018	SeqNo: 163	8730 Units:	mg/Kg		
Analyte	Result PQL SPK value	SPK Ref Val %REC I	_owLimit HighLi	mit %RPD	RPDLimit	Qual
Gasoline Range Organics (GRO Surr: BFB	) 28 4.8 23.88 990 955.1			28 16		
Sample ID 1804551-011	AMSD SampType: MSD	TestCode: EPA	Method 8015D:	Gasoline Rand	ae	
Client ID: Conf-11	Batch ID: 37562	RunNo: 505			5-	
Prep Date: 4/11/2018	Analysis Date: 4/12/2018	SeqNo: 163		mg/Kg		
Analyte	Result PQL SPK value		_owLimit HighLi	mit %RPD	RPDLimit	Qual
Gasoline Range Organics (GRO				28 6.26	20	Quai
Surr: BFB	1100 981.4	109	15 3	16 0	0	
Sample ID MB-37551	SampType: MBLK	TestCode: EPA	Method 8015D:	Gasoline Rang	ge	
Client ID: PBS	Batch ID: 37551	RunNo: 505	08			
Prep Date: 4/11/2018	Analysis Date: 4/12/2018	SeqNo: 163	8732 Units:	mg/Kg		
Analyte	Result PQL SPK value	SPK Ref Val %REC I	_owLimit HighLi	mit %RPD	RPDLimit	Qual
Gasoline Range Organics (GRO Surr: BFB	) ND 5.0 980 1000	97.8	15 3	16		
Sample ID LCS-37551	SampType: LCS	TestCode: EPA	Method 8015D:	Gasoline Rang	ge	
Client ID: LCSS	Batch ID: 37551	RunNo: 505	08			
Prep Date: 4/11/2018	Analysis Date: 4/12/2018	SeqNo: 163		mg/Kg		
Analyte	Result PQL SPK value	SPK Ref Val %REC L	_owLimit HighLi	mit %RPD	RPDLimit	Qual

#### Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

H Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit ND

**PQL** Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Sample pH Not In Range

P

RL Reporting Detection Limit Sample container temperature is out of limit as specified Page 19 of 23

# Hall Environmental Analysis Laboratory, Inc.

WO#: **1804551** 

17-Apr-18

Client: Rule Engineering LLC

Project: Lucerne A #1

Sample ID LCS-37551	SampType	: LCS	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	е	
Client ID: LCSS	Batch ID	37551	F	RunNo: 5	0508				
Prep Date: 4/11/2018	Analysis Date	4/12/2018	5	SeqNo: 1	638733	Units: mg/K	g		
Analyte	Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0 25.00	0	114	75.9	131			
Surr: BFB	1100	1000		108	15	316			
Sample ID MB-37580	SampType	e: MBLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	je	
Client ID: PBS	Batch ID	37580	F	RunNo: 5	0542				
Prep Date: 4/12/2018	Analysis Date	4/13/2018	5	SeqNo: 1	639961	Units: mg/K	(g		
A	D!! D	OI ODK	CDV D-fV-I	N/DEC	Land insit	Litaria Lina ik	0/ DDD	DDDI :mai#	Ougl

Sample ID LCS-37580	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Surr: BFB	1000		1000		104	15	316			
Gasoline Range Organics (GRO)	ND	5.0								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Prep Date: 4/12/2018	Analysis D	ate: 4/	13/2018	S	SeqNo: 1	639961	Units: mg/K	g		

Sample ID LCS-37580	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: LCSS	Batch	ID: 37	580	F	RunNo: 5	0542				
Prep Date: 4/12/2018	Analysis D	ate: 4/	13/2018	S	SeqNo: 1	639962	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	114	75.9	131			
Surr: BFB	1200		1000		115	15	316			

#### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

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# Hall Environmental Analysis Laboratory, Inc.

SampType: MS

WO#: 1804551

17-Apr-18

Rule Engineering LLC Client:

Project: Lucerne A #1

Sample ID 1804551-010AMS

Sample ID MB-37562	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: PBS	Batch	1D: 37	562	F	RunNo: 5	0508				
Prep Date: 4/11/2018	Analysis D	ate: 4/	12/2018	S	SeqNo: 1	638765	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.87		1.000		87.5	80	120			
- Dromondolobelizelle										
Sample ID LCS-37562		ype: LC	S	Tes	tCode: El	PA Method	8021B: Volat	tiles		
	SampT	ype: LC			tCode: El		8021B: Volat	tiles		
Sample ID LCS-37562	SampT	n ID: <b>37</b>	562	F		0508	8021B: Volat			
Sample ID LCS-37562 Client ID: LCSS	SampT Batcl	n ID: <b>37</b>	562 12/2018	F	RunNo: 5	0508			RPDLimit	Qual
Sample ID LCS-37562 Client ID: LCSS Prep Date: 4/11/2018	SampT Batch Analysis D	n ID: <b>37</b> Pate: <b>4</b> /	562 12/2018	F	RunNo: 5 SeqNo: 1	0508 638766	Units: mg/K	(g	RPDLimit	Qual
Sample ID LCS-37562 Client ID: LCSS Prep Date: 4/11/2018 Analyte	SampT Batcl Analysis D Result	n ID: <b>37</b> Pate: <b>4</b> /	562 12/2018 SPK value	SPK Ref Val	RunNo: 5 SeqNo: 1 %REC	0508 638766 LowLimit	Units: mg/K	(g	RPDLimit	Qual
Sample ID LCS-37562 Client ID: LCSS Prep Date: 4/11/2018 Analyte Benzene	SampT Batcl Analysis D Result 0.91	PQL 0.025	562 12/2018 SPK value 1.000	SPK Ref Val	RunNo: <b>5</b> SeqNo: <b>1</b> %REC  91.0	0508 638766 LowLimit 77.3	Units: mg/K HighLimit	(g	RPDLimit	Qual
Sample ID LCS-37562 Client ID: LCSS Prep Date: 4/11/2018 Analyte Benzene Toluene	SampT Batch Analysis E Result 0.91 0.90	PQL 0.025 0.050	562 12/2018 SPK value 1.000 1.000	SPK Ref Val	RunNo: 5 SeqNo: 1 %REC 91.0 89.7	0508 638766 LowLimit 77.3 79.2	Units: mg/K HighLimit 128 125	(g	RPDLimit	Qual

Client ID: Conf-10	Batch	1D: <b>37</b>	562	F	RunNo: 50	0508				
Prep Date: 4/11/2018	Analysis D	ate: 4/	12/2018	S	SeqNo: 1	638768	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9671	0	94.1	68.5	133			
Toluene	0.90	0.048	0.9671	0	93.2	75	130			
Ethylbenzene	0.90	0.048	0.9671	0	92.9	79.4	128			
Xylenes, Total	2.7	0.097	2.901	0	94.8	77.3	131			
Surr: 4-Bromofluorobenzene	0.84		0.9671		87.1	80	120			

Sample ID 1804551-010AMS	D SampTy	pe: MS	SD	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: Conf-10	Batch	ID: 37	562	F	RunNo: 5	0508				
Prep Date: 4/11/2018	Analysis Da	ate: 4/	12/2018	S	SeqNo: 1	638769	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	0.9843	0	97.1	68.5	133	4.94	20	
Toluene	0.96	0.049	0.9843	0	97.0	75	130	5.79	20	
Ethylbenzene	0.94	0.049	0.9843	0	96.0	79.4	128	4.97	20	
Xylenes, Total	2.9	0.098	2.953	0	98.3	77.3	131	5.42	20	
Surr: 4-Bromofluorobenzene	0.87		0.9843		88.0	80	120	0	0	

#### Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

TestCode: EPA Method 8021B: Volatiles

E Value above quantitation range

Analyte detected below quantitation limits J

Page 21 of 23

Sample pH Not In Range P

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

0.95

0.94

2.9

0.88

0.050

0.050

0.10

1.000

1.000

3.000

1.000

WO#: **1804551** 

17-Apr-18

Client: Rule Engineering LLC

Project: Lucerne A #1

Sample ID MB-37551	SampT	уре: МЕ	BLK	Test	Code: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batch	ID: 37	551	R	tunNo: 5	0508				
Prep Date: 4/11/2018	Analysis D	ate: 4/	12/2018	S	SeqNo: 1	638777	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.86		1.000		86.4	80	120			
Sample ID LCS-37551	SampT	ype: LC	S	Test	tCode: El	PA Method	8021B: Volat	iles		
Client ID: LCSS	Batch	ID: 37	551	R	RunNo: 5	0508				
Prep Date: 4/11/2018	Analysis D	ate: 4/	12/2018	S	SeqNo: 1	638778	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.8	77.3	128			

0

0

0

95.3

93.9

96.3

88.4

79.2

80.7

81.6

80

125

127

129

120

Sample ID MB-37580	SampT	ype: ME	BLK	Test	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: PBS	Batch	1D: 37	580	R	RunNo: 5	0542				
Prep Date: 4/12/2018	Analysis D	ate: 4/	13/2018	S	SeqNo: 1	639986	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.0	80	120			

Sample ID LCS-37580	SampT	ype: LC	S	Test	tCode: El	PA Method	8021B: Volat	iles		
Client ID: LCSS	Batch	ID: 37	580	R	RunNo: 5	0542				
Prep Date: 4/12/2018	Analysis D	ate: 4/	13/2018	S	SeqNo: 1	639987	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.5	77.3	128			
Toluene	0.91	0.050	1.000	0	91.4	79.2	125			
Ethylbenzene	0.90	0.050	1.000	0	90.3	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	92.8	81.6	129			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.6	80	120			

#### Qualifiers:

Toluene

Ethylbenzene

Xylenes, Total

Surr: 4-Bromofluorobenzene

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

Page 22 of 23

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1804551

17-Apr-18

Client:

Rule Engineering LLC

**Project:** 

Lucerne A #1

Sample ID 1804551-017AMS	SampT	ype: MS	3	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: Conf-15	Batch	n ID: 37	580	F	RunNo: 5	0542				
Prep Date: 4/12/2018	Analysis D	Date: 4/	13/2018	S	SeqNo: 1	639989	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9425	0	111	68.5	133			
Toluene	1.0	0.047	0.9425	0	111	75	130			
Ethylbenzene	1.1	0.047	0.9425	0	112	79.4	128			
Xylenes, Total	3.2	0.094	2.828	0	114	77.3	131			
Surr: 4-Bromofluorobenzene	0.88		0.9425		93.0	80	120			
Sample ID 1804551-017AMS	D Samp1	ype: MS	SD	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Sample ID 1804551-017AMS Client ID: Conf-15		ype: <b>MS</b>			tCode: El		8021B: Vola	tiles		
		n ID: 37	580	F		0542	8021B: Vola			
Client ID: Conf-15	Batcl	n ID: 37	580 13/2018	F	RunNo: 5	0542			RPDLimit	Qual
Client ID: <b>Conf-15</b> Prep Date: <b>4/12/2018</b>	Batcl Analysis D	n ID: <b>37</b> : Date: <b>4</b> /	580 13/2018	F	RunNo: 5 SeqNo: 1	0542 639990	Units: mg/F	(g	RPDLimit 20	Qual
Client ID: Conf-15 Prep Date: 4/12/2018 Analyte	Batcl Analysis D Result	n ID: <b>37</b> 9 Date: <b>4</b> /	580 13/2018 SPK value	SPK Ref Val	RunNo: 5 SeqNo: 1 %REC	0542 639990 LowLimit	Units: mg/F	(g %RPD		Qual
Client ID: Conf-15 Prep Date: 4/12/2018 Analyte Benzene	Batcl Analysis E Result	PQL 0.025	580 13/2018 SPK value 0.9950	SPK Ref Val	RunNo: 5 SeqNo: 1 %REC 101	0542 639990 LowLimit 68.5	Units: mg/F HighLimit 133	%RPD 3.84	20	Qual
Client ID: Conf-15 Prep Date: 4/12/2018 Analyte Benzene Toluene	Batcl Analysis D Result 1.0 1.0	PQL 0.025 0.050	580 13/2018 SPK value 0.9950 0.9950	SPK Ref Val 0 0	RunNo: 5 SeqNo: 1 %REC 101 101	0542 639990 LowLimit 68.5 75	Units: mg/F HighLimit 133 130	%RPD 3.84 4.33	20 20	Qual
Client ID: Conf-15 Prep Date: 4/12/2018 Analyte Benzene Toluene Ethylbenzene	Batcl Analysis D Result 1.0 1.0	PQL 0.025 0.050	580 13/2018 SPK value 0.9950 0.9950 0.9950	SPK Ref Val 0 0	RunNo: 5 SeqNo: 1 %REC 101 101 100	0542 639990 LowLimit 68.5 75 79.4	Units: mg/F HighLimit 133 130 128	%RPD 3.84 4.33 5.71	20 20 20	Qual

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 23 of 23



#### Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

# Sample Log-In Check List

RcptNo: 1 Client Name: RULE ENGINEERING LL Work Order Number: 1804551 in at 4/11/2018 7:50:00 AM Erin Melendrez Received By: 4/11/2018 8:58:14 AM Erin Melendrez Completed By: 4/11/18 IMO Reviewed By: Chain of Custody Yes 🗸 No 🗌 Not Present 1. Is Chain of Custody complete? 2. How was the sample delivered? Courier Log In No 🗌 NA 🗌 Yes 🗸 3. Was an attempt made to cool the samples? No 🗆 Yes 🗸 NA T 4. Were all samples received at a temperature of >0° C to 6.0°C No 🗌 Yes 🗸 Sample(s) in proper container(s)? 6. Sufficient sample volume for indicated test(s)? Yes ~ No L 7. Are samples (except VOA and ONG) properly preserved? No V NA 8. Was preservative added to bottles? Yes No VOA Vials No 9. VOA vials have zero headspace? Yes No 🗹 Yes 10. Were any sample containers received broken? # of preserved bottles checked 11. Does paperwork match bottle labels? Yes No L for pH: (Note discrepancies on chain of custody) 12. Are matrices correctly identified on Chain of Custody? Yes ~ No No 13. Is it clear what analyses were requested? Checked by: Yes 🗸 No 🗔 14. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes NA V 15. Was client notified of all discrepancies with this order? No 🗌 Person Notified: Date: By Whom: Via: ☐ eMail Phone Fax In Person Regarding: Client Instructions: 16. Additional remarks: 17. Cooler Information Temp °C | Condition Cooler No Seal Intact | Seal No Seal Date Signed By 2.5 Good Yes

С	hain-	of-Cu	stody Record	Turn-A	round	Time:									-		,		B. I B.	AICI	NTA	-	
Client:	Rule	Engi	neering, LLC	☑ Sta	andard		Rush			1870	H	ľ	1A \N	LL Ai	Y	N V STS	L S	ΔF	30 141	RA	TO	AL RY	r
		3	3'	Project	t Name	:											ment						
Mailing	Address	50) f	tirpont Dr. Suite	14	uern	P	A #	=1		49	01 H						erqu			109			
200 E		lm - 40	M ×74/01	Project	t #:				1			05-34				-	505-						
Phone #	#: 555	793	M 8740)								)i. 00	000	.0 0.	1000000000	1000		Req		-			7.1 (1) -2.1	
email or			nule engineer; ay, com	Projec	t Mana	ger:			121)	TPH (Gas only)	/ DRO / MRO)			()		,SO <sub>4</sub> )	B's						
Stan			☐ Level 4 (Full Validation)	He	ath	0.0	W	20d5	s (8(	(Gas	30/			SIMS)		PO4	PCB's						
Accredi		□ Othe	r		er: Ju		<u>`</u>	Valdez no	+ TME's (8021)	TPH-	0 / DF	418.1)	1.1)			3,NO <sub>2</sub>	/ 8082		8				N
□ EDD	(Type)			7 Thes. 458278(31)(81) 81,201,39	11100320	LAB SEPTEMBED ENGLISH	And the second	5		3E +	(GRO	d 41	d 50	or	tals	S,	des	~	00				2
Date	Time	Matrix	Sample Request ID	Cont		Prese		· 中国	BTEX + MOSE	BTEX + MTBE	TPH 8015B	TPH (Method	EDB (Method 504.1)	PAH's (8310 or 8270	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles
1/10/15	1015	50:1	Conf-1	(1)402	Glass	Co	19	-001	4		X												
	1026		Conf-2					-002			1												
	1025		Conf-3					-003															
	1030		Conf-4					-004															
	1635		Conf-5					-005															
	1039		Conf-6					-000															
	1045		Conf-7	1				-007															
	1050		Con F - 8					-008															
	1055		Cont-9					-009															
	1102		Con f - 10					-010													$\perp$	$\perp$	
	1105		Conf-11					-011													$\perp$	$\perp$	L
V	1110	J	Conf-12	1	/	1		-012	1		V												$\perp$
Date:	Time:	Relinquish	sti lala	Receive	istu	ell	he	Date Time  Le 4/10/18/700	Rei	mark	s: L	8;	11	to	H	11.	(O)	9					
Date:	Time:	Relinquish	ed by:	Receive	d by:	α >	urie 4/11/11 EN	Date / Time 34 4/11/18/07/50	)	) N C													
1	fnec v	samples sub	mitted to Hall Environmental may be sub-	contracted t	to other ac			This serves as notice of this	s p	ility.	Any s	ub-cor	tracte	d data	will be	e clear	rly nota	ated or	n the a	nalytica	report.		

(/

C	hain-	-ot-Cu	stody Record	Turn-Around	Time:		- 1							-						1	. "	
Client:	Rule F	Enginee	ring. LLC	Standard Project Name		1					A		AL	. 1 2	SIS ironr	L	AE	SU	RA	TO	RY	
Mailing	Address	501 6	timont Drive Suite	Luci	erne A	1#			490	)1 Ha								M 87	109			
105 Fu	minute	M. NM.	8746)	Project #:														4107				
Phone 7	#:	565	793 9486								H		Α	naly	sis	Req	uest					
email o			rule engineering Com	Project Mana	ger:				(5)	ô					(4)						$\Box$	
	Package:							(8021)	sor	AF		- 1	(C)		S,t	B's						
Stan	dard		☐ Level 4 (Full Validation)	Heath	er Ille	onds		8 (8	(Ga	õ		.	SIMS)		PO,	PC						
Accredi				Sampler:	ustin 1	lalder/to	ally	TMB's	+ TPH (Gas only)	P.	=	=	20 S		102,	082				1		_
□ NEL	AP	□ Othe	r	On Ice:	Yes	□ No		7	F	2	18.	9	82		J3, N	8/8	-	F				or N)
□ EDD	(Type)_			Sample Temp	perature: 2.	5	y,	開	MTBE	9	d d	0d 5	0 or	tals	Ž,	ide	8	3				7
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO	10.00	BTEX + MYRE	BTEX + MT	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Metho	PAH's (8310 or 8270	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pestic	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles
1018	3333	Sil	Conf-13	6) Yor Glass	Cold	-013		7		4												
	1170	1	Con f-14			-014		4		4												
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1/10/18	1722	Soil	Conf-15	(1)402Gks	Cold	-017		X		X												
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Date:	Time: 760 Time:	Refinquishe	In the	Received by:	Couried 5 4/11/18	Date Tim	υ e	Ren	narks		+	B	14,		40	7	Hi	Nc	gna	`		
		samples subr	mitted to Hall Environmental may be subc	contracted to other ac				possit	oility. A	ny sul	b-contr	racted	data	will be	clear	ly nota	ted on	the ar	nalytical	report.		_

# ATTACHMENT C



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

April 30, 2018

Heather Woods Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401 TEL: (505) 325-1055

FAX

RE: Lucerne A 1



OrderNo.: 1804C32

#### Dear Heather Woods:

Hall Environmental Analysis Laboratory received 7 sample(s) on 4/25/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1804C32

Date Reported: 4/30/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-2

Project: Lucerne A 1

**Collection Date:** 4/24/2018 9:40:00 AM

**Lab ID:** 1804C32-001

Matrix: SOIL

Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	4/28/2018 2:04:32 AM	37820
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	4/28/2018 2:04:32 AM	37820
Surr: DNOP	94.2	70-130	%Rec	1	4/28/2018 2:04:32 AM	37820
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	4/26/2018 7:44:12 PM	37799
Surr: BFB	91.7	15-316	%Rec	1	4/26/2018 7:44:12 PM	37799
EPA METHOD 8021B: VOLATILES					Analyst	:: NSB
Benzene	ND	0.024	mg/Kg	1	4/26/2018 7:44:12 PM	37799
Toluene	ND	0.047	mg/Kg	1	4/26/2018 7:44:12 PM	37799
Ethylbenzene	ND	0.047	mg/Kg	1	4/26/2018 7:44:12 PM	37799
Xylenes, Total	ND	0.095	mg/Kg	1	4/26/2018 7:44:12 PM	37799
Surr: 4-Bromofluorobenzene	101	80-120	%Rec	1	4/26/2018 7:44:12 PM	37799

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab Order 1804C32

Date Reported: 4/30/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-4

Project: Lucerne A 1

Collection Date: 4/24/2018 9:43:00 AM

**Lab ID:** 1804C32-002

Matrix: SOIL

Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	4/28/2018 2:26:38 AM	37820
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	4/28/2018 2:26:38 AM	37820
Surr: DNOP	89.4	70-130	%Rec	1	4/28/2018 2:26:38 AM	37820
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	4/26/2018 8:07:22 PM	37799
Surr: BFB	91.9	15-316	%Rec	1	4/26/2018 8:07:22 PM	37799
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	4/26/2018 8:07:22 PM	37799
Toluene	ND	0.047	mg/Kg	1	4/26/2018 8:07:22 PM	37799
Ethylbenzene	ND	0.047	mg/Kg	1	4/26/2018 8:07:22 PM	37799
Xylenes, Total	ND	0.095	mg/Kg	1	4/26/2018 8:07:22 PM	37799
Surr: 4-Bromofluorobenzene	104	80-120	%Rec	1	4/26/2018 8:07:22 PM	37799

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

#### Lab Order 1804C32

Date Reported: 4/30/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-5

Project: Lucerne A 1

Collection Date: 4/24/2018 9:48:00 AM

**Lab ID:** 1804C32-003

Matrix: SOIL

Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	60	9.7	mg/Kg	1	4/28/2018 2:48:43 AM	37820
Motor Oil Range Organics (MRO)	53	48	mg/Kg	1	4/28/2018 2:48:43 AM	37820
Surr: DNOP	94.9	70-130	%Rec	1	4/28/2018 2:48:43 AM	37820
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/26/2018 8:30:30 PM	37799
Surr: BFB	90.0	15-316	%Rec	1	4/26/2018 8:30:30 PM	37799
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	4/26/2018 8:30:30 PM	37799
Toluene	ND	0.048	mg/Kg	1	4/26/2018 8:30:30 PM	37799
Ethylbenzene	ND	0.048	mg/Kg	1	4/26/2018 8:30:30 PM	37799
Xylenes, Total	ND	0.097	mg/Kg	1	4/26/2018 8:30:30 PM	37799
Surr: 4-Bromofluorobenzene	101	80-120	%Rec	1	4/26/2018 8:30:30 PM	37799

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Lab Order 1804C32

Date Reported: 4/30/2018

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SC-8

Project: Lucerne A 1

**Collection Date:** 4/24/2018 9:56:00 AM

**Lab ID:** 1804C32-004

**CLIENT:** Rule Engineering LLC

Matrix: SOIL

Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst	: TOM	
Diesel Range Organics (DRO)	ND	9.1	mg/Kg	1	4/28/2018 3:11:03 AM	37820	
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	4/28/2018 3:11:03 AM	37820	
Surr: DNOP	92.4	70-130	%Rec	1	4/28/2018 3:11:03 AM	37820	
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	: NSB	
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	4/26/2018 8:53:41 PM	37799	
Surr: BFB	90.3	15-316	%Rec	1	4/26/2018 8:53:41 PM	37799	
EPA METHOD 8021B: VOLATILES					Analyst	: NSB	
Benzene	ND	0.024	mg/Kg	1	4/26/2018 8:53:41 PM	37799	
Toluene	ND	0.047	mg/Kg	1	4/26/2018 8:53:41 PM	37799	
Ethylbenzene	ND	0.047	mg/Kg	1	4/26/2018 8:53:41 PM	37799	
Xylenes, Total	ND	0.095	mg/Kg	1	4/26/2018 8:53:41 PM	37799	
Surr: 4-Bromofluorobenzene	102	80-120	%Rec	1	4/26/2018 8:53:41 PM	37799	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 4 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Lab Order 1804C32

Date Reported: 4/30/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-12

Project: Lucerne A 1

Collection Date: 4/24/2018 10:02:00 AM

**Lab ID:** 1804C32-005

Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3			Analyst	том
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	4/28/2018 3:33:10 AM	37820
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	4/28/2018 3:33:10 AM	37820
Surr: DNOP	84.2	70-130	%Rec	1	4/28/2018 3:33:10 AM	37820
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/26/2018 9:16:55 PM	37799
Surr: BFB	92.7	15-316	%Rec	1	4/26/2018 9:16:55 PM	37799
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.024	mg/Kg	1	4/26/2018 9:16:55 PM	37799
Toluene	ND	0.048	mg/Kg	1	4/26/2018 9:16:55 PM	37799
Ethylbenzene	ND	0.048	mg/Kg	1	4/26/2018 9:16:55 PM	37799
Xylenes, Total	ND	0.097	mg/Kg	1	4/26/2018 9:16:55 PM	37799
Surr: 4-Bromofluorobenzene	103	80-120	%Rec	1	4/26/2018 9:16:55 PM	37799

Matrix: SOIL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 5 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

### Lab Order 1804C32

Date Reported: 4/30/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-18

Project: Lucerne A 1

**Collection Date:** 4/24/2018 10:07:00 AM

**Lab ID:** 1804C32-006

Matrix: SOIL

Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	4/28/2018 3:55:24 AM	37820
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	4/28/2018 3:55:24 AM	37820
Surr: DNOP	91.4	70-130	%Rec	1	4/28/2018 3:55:24 AM	37820
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/26/2018 9:40:08 PM	37799
Surr: BFB	88.3	15-316	%Rec	1	4/26/2018 9:40:08 PM	37799
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	4/26/2018 9:40:08 PM	37799
Toluene	ND	0.049	mg/Kg	1	4/26/2018 9:40:08 PM	37799
Ethylbenzene	ND	0.049	mg/Kg	1	4/26/2018 9:40:08 PM	37799
Xylenes, Total	ND	0.098	mg/Kg	1	4/26/2018 9:40:08 PM	37799
Surr: 4-Bromofluorobenzene	99.4	80-120	%Rec	1	4/26/2018 9:40:08 PM	37799

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 6 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

## Lab Order 1804C32

Date Reported: 4/30/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-19

Project: Lucerne A 1

**Collection Date:** 4/24/2018 9:52:00 AM

**Lab ID:** 1804C32-007

Matrix: SOIL

Received Date: 4/25/2018 6:40:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	8.7	mg/Kg	1	4/28/2018 4:17:29 AM	37820
Motor Oil Range Organics (MRO)	ND	44	mg/Kg	1	4/28/2018 4:17:29 AM	37820
Surr: DNOP	92.0	70-130	%Rec	1	4/28/2018 4:17:29 AM	37820
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/26/2018 10:03:29 PM	37799
Surr: BFB	89.9	15-316	%Rec	1	4/26/2018 10:03:29 PM	37799
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	4/26/2018 10:03:29 PM	37799
Toluene	ND	0.050	mg/Kg	1	4/26/2018 10:03:29 PM	37799
Ethylbenzene	ND	0.050	mg/Kg	1	4/26/2018 10:03:29 PM	37799
Xylenes, Total	ND	0.10	mg/Kg	1	4/26/2018 10:03:29 PM	37799
Surr: 4-Bromofluorobenzene	100	80-120	%Rec	1	4/26/2018 10:03:29 PM	37799

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 7 of 10
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# **OC SUMMARY REPORT**

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1804C32

30-Apr-18

Client:

Rule Engineering LLC

**Project:** 

Lucerne A 1

Sample ID LCS-37831

SampType: LCS

TestCode: EPA Method 8015M/D: Diesel Range Organics

70

Client ID: LCSS

Batch ID: 37831

RunNo: 50882

Prep Date:

4/27/2018

Analysis Date: 4/27/2018

SeqNo: 1651344

Units: %Rec

PQL

Analyte Surr: DNOP Result 4.6 SPK value SPK Ref Val 5.000

%REC LowLimit HighLimit

130

**RPDLimit** Qual

%RPD

Sample ID MB-37831

PBS

SampType: MBLK

RunNo: 50882

92.0

Prep Date:

4/27/2018

Batch ID: 37831

Units: %Rec

130

Analyte

Client ID:

Analysis Date: 4/27/2018

SeqNo: 1651345

Surr: DNOP

Result 9.5 PQL SPK value SPK Ref Val %REC LowLimit 95.4

HighLimit

TestCode: EPA Method 8015M/D: Diesel Range Organics

%RPD **RPDLimit** Qual

Sample ID LCS-37820

SampType: LCS

51

5.0

Result

ND

ND

10

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID:

LCSS

Batch ID: 37820

5.000

10.00

RunNo: 50882

Analyte

4/26/2018 Analysis Date: 4/27/2018 Result

SeqNo: 1652240

Units: mg/Kg HighLimit

**RPDLimit** 

Diesel Range Organics (DRO) Surr: DNOP

Prep Date:

PQL SPK value 10

SPK Ref Val %REC 50.00 0

102 99.7

LowLimit

70

70

130 130

%RPD **RPDLimit** Qual

Sample ID MB-37820

Motor Oil Range Organics (MRO)

SampType: MBLK

TestCode: EPA Method 8015M/D: Diesel Range Organics

%RPD

Client ID: Prep Date:

Surr: DNOP

PBS

4/26/2018

Batch ID: 37820 Analysis Date: 4/27/2018 RunNo: 50882

%REC

SeqNo: 1652241

Units: mg/Kg

HighLimit

Qual

Analyte

Diesel Range Organics (DRO)

PQL

10 50

10.00

SPK value SPK Ref Val

102

70

LowLimit

130

#### **Qualifiers:**

ND

Value exceeds Maximum Contaminant Level.

Not Detected at the Reporting Limit

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- **PQL** Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank

Sample container temperature is out of limit as specified

- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

W

RL Reporting Detection Limit Page 8 of 10

# **QC SUMMARY REPORT**

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1804C32

30-Apr-18

Client:

Rule Engineering LLC

Project:

Lucerne A 1

Sample ID MB-37799

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS

Batch ID: 37799

RunNo: 50852

Prep Date: 4/25/2018 Analysis Date: 4/26/2018

Result

Units: mg/Kg

Analyte

Surr: BFB

PQL

5.0

SeqNo: 1650625

LowLimit

LowLimit

15

Qual

Gasoline Range Organics (GRO)

ND 920

1000

SPK value SPK Ref Val

92.5

%REC

HighLimit 316 **RPDLimit** 

Sample ID LCS-37799

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

Client ID:

LCSS

Batch ID: 37799

RunNo: 50852

Prep Date: 4/25/2018 Analysis Date: 4/26/2018

SeqNo: 1650626

Units: mg/Kg

Analyte

Result PQL SPK value SPK Ref Val

%REC

HighLimit %RPD **RPDLimit** 131

%RPD

Qual

Gasoline Range Organics (GRO) Surr: BFB

28 1000 5.0 25.00 1000 111 103 75.9 15

316

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit ND

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

E Value above quantitation range

Analyte detected below quantitation limits

Page 9 of 10

P Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

# Hall Environmental Analysis Laboratory, Inc.

WO#: **1804C32** 

30-Apr-18

Client:

Rule Engineering LLC

Project:

Lucerne A 1

Sample ID MB-37799	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: PBS	Batch ID: 37799 RunNo: 50852									
Prep Date: 4/25/2018	Analysis D	Date: 4/	26/2018	S	SeqNo: 1	650654	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			
The state of the s										
Sample ID LCS-37799	SampT	ype: LC	S	Tes	tCode: El	PA Method	8021B: Volat	iles		
Sample ID LCS-37799 Client ID: LCSS		ype: LC			tCode: El		8021B: Volat	iles		
the same of the sa		h ID: 37	799	F		0852	8021B: Volat			
Client ID: LCSS	Batch	h ID: 37	799 26/2018	F	RunNo: 5	0852			RPDLimit	Qual
Client ID: LCSS Prep Date: 4/25/2018	Batch Analysis D	n ID: 37	799 26/2018	F	RunNo: 5 GeqNo: 1	0852 650655	Units: mg/K	(g	RPDLimit	Qual
Client ID: LCSS Prep Date: 4/25/2018 Analyte	Batch Analysis D Result	n ID: <b>37</b> Date: <b>4</b> /	799 26/2018 SPK value	SPK Ref Val	RunNo: 5 SeqNo: 1 %REC	0852 650655 LowLimit	Units: mg/K	(g	RPDLimit	Qual
Client ID: LCSS Prep Date: 4/25/2018 Analyte Benzene	Batch Analysis D Result	PQL 0.025	799 26/2018 SPK value 1.000	SPK Ref Val	RunNo: 5 SeqNo: 1 %REC 102	0852 650655 LowLimit 77.3	Units: mg/K HighLimit	(g	RPDLimit	Qual
Client ID: LCSS Prep Date: 4/25/2018 Analyte Benzene Toluene	Batch Analysis D Result 1.0	PQL 0.025 0.050	799 26/2018 SPK value 1.000 1.000	SPK Ref Val 0 0	RunNo: 5 SeqNo: 1 %REC 102 103	0852 650655 LowLimit 77.3 79.2	Units: mg/K HighLimit 128 125	(g	RPDLimit	Qual

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 10 of 10



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: RULE ENG	INEERING LL	Work (	Order Number:	1804	C32			RcptNo	1	
								* #		
Received By: Erin Mele	ndrez	4/25/201	8 6:40:00 AM			un un	ME	7		
Completed By: Erin Mele	ndrez പറി	4/25/201	8,9:02:37 AM		,	un.	UL	7 ,		
Reviewed By:	المحال	(7)	1.0			97			±.	
cabled by	11701	8 Hr				*			*	
Chain of Custody					_					
1. Is Chain of Custody comp	lete?	/e5		Yes	<b>V</b>	No		Not Present		
2. How was the sample deliv	rered?			Couri	er				•	
Log In										
3. Was an attempt made to d	cool the sample	s?		Yes	<b>V</b>	No		NA 🗆		
						N-		🗖		
<ol> <li>Were all samples received</li> </ol>	at a temperatu	re of >0° C to	6.0°C	Yes	<b>V</b>	NO		NA 🗆		
5. Sample(s) in proper conta	iner(s)?			Yes	V	No				
6. Sufficient sample volume f	or indicated tes	t(s)?		Yes	<b>✓</b>	No				
7. Are samples (except VOA			d?	Yes	<b>V</b>	No				
8. Was preservative added to				Yes		No	<b>V</b>	NA 🗆		
9. VOA vials have zero heads	snace?			Yes		No		No VOA Vials		
10. Were any sample contained		ken?					<b>Y</b>			_
10. Troto any bampio bontant	510 10001100 510			100				# of preserved bottles checked	118	
11. Does paperwork match bot	ttle labels?			Yes	<b>V</b>	No		for pH:	1201	
(Note discrepancies on cha								mail by 2	12 unless note	ed)
12. Are matrices correctly iden		of Custody?			<b>V</b>	No		Madaga		
13. Is it clear what analyses we					<b>Y</b>	No No		Checked by:		
<ol><li>Were all holding times able (If no, notify customer for a</li></ol>				Yes	•	NO		Oncorda by		
Special Handling (if app							,	*		
15. Was client notified of all d		th this order?		Yes		No		NA 🗹		
	CONTRACTOR CONTRACTOR	editoriamente di mante di mant	Data		AMBRODOC, TU					
Person Notified: By Whom:		and a manufacture of the Control of	Date:   Via:	7 0840		Phone -	Eov	□ In Porcen		ï
Regarding:	Transport of the Control of the Cont	TANAHAMAN TENAHAMAN	VIA.	_ eMa	II I	Phone _	Fax	in Person	İ	
Client Instructions:	Program procuremental etc. 7527 pr. pr. pp. pp. marcon cuta dec. 7527 p	A CHARACTORA COMPANY CONTRACTOR		erci crazici dana dida.		Mildiana manakan artirip 19. 36. 36.3				
16. Additional remarks:									<u>.</u>	
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# ATTACHMENT D

## Clara Cardoza

From:	Thomas, Leigh <l1thomas@blm.gov></l1thomas@blm.gov>
Sent:	Tuesday, May 1, 2018 11:01 AM
То:	Smith, Cory, EMNRD
Cc:	Clara Cardoza; Adeloye, Abiodun; Fields, Vanessa, EMNRD; Scott, Sarah
Subject:	[EXTERNAL E-MAIL] Re: [EXTERNAL] RE: UPDATED: Confirmation Sampling at Lucerne A1
The BLM agrees with OCDs de	ecision to approve Hilcorps variance request and also approves the variance.
Thank you and if you have any	question please let me know.
Whitney Thomas Natural Resource Specialist Farmington Field Office 6251 North College Boulevard Suite A Farmington, NM 87402 Office: 505-564-7680 Cell: 505-635-9796 email: <a href="mailto:lithomas@blm.gov">lithomas@blm.gov</a>	
On Tue, May 1, 2018 at 9:01 A	M, Smith, Cory, EMNRD < <u>Cory.Smith@state.nm.us</u> > wrote:
Clara,	
OCD Approves HEC request for this approval email in the Fina	r alternative closure standards for SC-5. Please include HEC determination and I C-141.
OCD approval does not relieve	e HEC of any other requirements imposed by other regulatory agencies.
Thank you,	
Cory Smith	
Environmental Specialist	
Oil Conservation Division	

Energy, Minerals, & Natural Resources

1000 Rio Brazos, Aztec, NM 87410

(505)334-6178 ext 115

cory.smith@state.nm.us

From: Clara Cardoza < ccardoza@hilcorp.com >

Sent: Tuesday, May 1, 2018 8:59 AM

To: 'Adeloye, Abiodun' <aadeloye@blm.gov'>; Smith, Cory, EMNRD <<u>Cory.Smith@state.nm.us</u>>
Cc: Fields, Vanessa, EMNRD <<u>Vanessa.Fields@state.nm.us</u>>; 'whitney thomas (<u>l1thomas@blm.gov</u>)'

<l1thomas@blm.gov>

Subject: UPDATED: Confirmation Sampling at Lucerne A1

Please see update:

Attached please find the confirmation sampling taken on April 24<sup>th</sup> at the Lucerne A1. Hilcorp respectfully asks for a variance for sample SC-5. TPH returned at 113 ppm a significant reduced from the previous sample of 390 ppm. Hilcorp believes the residual contaminates do not pose a present or foreseeable threat or an environmental risk to water, humans or animals, and requests approval to backfill the excavation. I have also included the previous confirmation sample results and excavation map for your convenience. Please let me know if you have any questions.

Thank you for your consideration,

Clara

From: Clara Cardoza

Sent: Monday, April 30, 2018 3:08 PM

**To:** Adeloye, Abiodun <a href="mailto:aadeloye@blm.gov">aadeloye@blm.gov</a>>; Smith, Cory, EMNRD <a href="mailto:cory.smith@state.nm.us">cory.smith@state.nm.us</a>>; Whitney thomas (<a href="mailto:l1thomas@blm.gov">l1thomas@blm.gov</a>)

<l1thomas@blm.gov>

Subject: RE: [EXTERNAL E-MAIL] Re: [EXTERNAL] RE: Confirmation Sampling at Lucerne A1

Attached please find the confirmation sampling taken on April 24<sup>th</sup> at the Lucerne A1. Hilcorp respectfully asks for a variance for sample SC-5. TPH returned at 113 ppm a significant reduced from the previous sample of 390 ppm. I have